



DEPARTMENT OF THE NAVY  
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U.S. MARINE CORPS TECHNICAL INSTRUCTION

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SLIDING CALIBRATION INTERVAL PROGRAM (SCIP)

TEST, MEASUREMENT AND DIAGNOSTIC EQUIPMENT

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Encl: (1) SCIP Logic Flow Chart

1. Purpose. To provide instructions and specific guidelines relative to the establishment of an optional SCIP within the Marine Corps Test, Measurement and Diagnostic Equipment (TMDE) Calibration and Maintenance Program (CAMP).

2. Cancellation. TI-4733-15/2.

3. Summary of Revision. This revision contains additional guidance in the following areas:

a. Use of the Equipment Repair Order (ERO) to record data elements required by the SCIP. The requirement to use calibration checklists is canceled, as this duplicates ERO completion instructions per the current edition of TM-4700-15/1.

b. Identification of TMDE to be supported by the SCIP will be initiated by the calibration facility, with provisions for additions by using units, based on the calibration facility's capabilities.

c. Illustration of the SCIP methodology is the enclosed logic flow chart.

d. Use of the SCIP Candidate TMDE Logbook is required documentation to implement and manage the SCIP at the calibration facility.

4. Information

a. Voluntary participation in the SCIP will allow calibration facilities to adjust the interval between calibrations of TMDE, based on evaluation of the TMDE's current and past history.

b. The primary objectives of the SCIP are to:

(1) Achieve the maximum practical TMDE reliability at minimum cost .

(2) Identify and ultimately dispose of unstable and unreliable TMDE.

c. The results of implementation of the SCIP are:

(1) Increased operational readiness of FMF Units, Posts and Stations (hereafter referred to as using units) through reduction of frequency of TMDE submissions for calibration, based on documented measurement reliability.

(2) Enhanced calibration facility support of using units through reduction of the high calibration workload by extension of calibration intervals, when conditions warrant, with no detrimental effects on TMDE reliability.

## 5. SCIP Instructions

a. Utilization and Participation. The SCIP is an optional program; therefore, It is not mandatory that it be used by organizations authorized calibration facilities. Should a calibration facility elect to use the SCIP, it will not be mandatory that all using units participate. Should a supported organization elect to participate, it will not be mandatory that all TMDE of that organization be assigned to the SCIP. Use and participation in the SCIP shall be based on the commander's evaluation of the using unit's individual requirements and operational commitments.

b. Definitions. The following definitions of SCIP terminology are provided to facilitate a better understanding of the criteria for adjusting calibration intervals:

(1) Functionally Operative. TMDE will generally be considered functionally operative when each of the measuring or generation characteristics of the instruments operate to such a degree that at least 75 percent of the desired results can be obtained.

(2) Critical Parameter/Function. Any measuring or generating characteristic of an item of TMDE which, when out of tolerance, would clearly cause an erroneous measurement or output and is expressed numerically with a tolerance of 10 percent or less.

(3) Operational Failure. The failure of active or passive circuit elements or component parts of an item of TMDE which occurred as a result of normal operation.

(4) Operator Abuse. Cracked, broken, or damaged mechanical assemblies, knobs, dials, connectors and instrument cases; nicked, burred or deeply scratched gauging surfaces and broken meter faces, plates, etc., shall generally be considered the result of operator abuse and shall not be considered as cause for adjustment of the calibration interval.

(5) Incorrect application. Burned, damaged, open or otherwise inoperative protective instrument fuses; input or output attenuators; bent meter pointers; damaged meter movements; etc., shall normally be considered the result of the incorrect use of a given item of TMDE and shall not be considered cause for adjustment of the calibration interval.

(6) Tampering. Broken calibration seals, missing or broken internal parts and components normally not available to the operator of a given item of TMDE or evidence of removal of retaining compound applied to adjustable controls shall generally be considered the result of operator tampering and shall not be cause for adjustment of the calibration interval.

(7) Initial Calibration Interval. Calibration intervals are established for specific model numbers of TMDE by the current edition of TI-4733-15/13. Metrology Requirements List (METRL) or, when a specific model number is not listed, the generic calibration interval is established in Section 2 of the METRL.

c. SCIP Requirements. The logic flow chart enclosed is for adjusting calibration intervals and is for use by Marine Corps calibration facilities. Amplifying instructions follow.

#### NOTE

Logic wall flow charts will be provided separately to all Marine Corps calibration facilities. The enclosure is identical to the wall charts. Wall charts may be obtained from the CG MCRDAC (PST-L).

(1) TMDE Receipt Date. The date that an item of TMDE is received by the calibration facility must be entered on the ERO. The receipt date, relative to the calibration due date, is critical to the operation of the SCIP if the program is to attain its stated objectives. TMDE received 16 days or more prior to the calibration due date will not have its calibration interval lengthened. TMDE received 16 days or more after the calibration due date will not have its calibration interval shortened.

(2) TMDE Inspection Requirements. An initial inspection of the TMDE shall be conducted to determine its condition upon receipt. An accurate assessment of the initial condition upon receipt is vital to successful application of the SCIP. Functionally inoperative instruments will be inspected prior to effective repair to determine

the cause of the functionally inoperative condition. The ERO should be annotated with one of the following interval decision codes to indicate the condition upon receipt and, if appropriate, the cause of the functionally inoperative condition:

<u>Code</u>	<u>Condition</u>
FO	Functionally operative
FI-OF	Functionally inoperative - operational failure
FI-MAT	Functionally inoperative - incorrect application Functionally inoperative - operator abuse Functionally inoperative - tampering

The preceding interval decision codes must be verified during the repair of calibration process and corrected, if required. Adjustment of power supply voltages, power levels, frequency responses, etc., or other adjustments normally not made by the user, will not be made by the repair technician to functionally operative TMDE. Such adjustments could ultimately affect the validity of the calibration results evaluation.

(3) Evaluation of Inspection. Upon completion of the TMDE calibration, the final inspection results must be evaluated to determine whether a change in calibration interval is required. The calibration interval for TMDE identified as FI-OF upon receipt will be reduced by the magnitude identified in paragraph 5c(5)(b), following. TMDE identified as FO upon receipt will be further evaluated to determine the need for a change in the calibration interval and the direction of that change per the enclosure.

(4) Evaluation of Calibration History. The maintenance of a complete calibration history is invaluable in the identification of unstable or unreliable TMDE and the overall conduct of the TMDE CAMP. However, the only historical information required for adjustment of calibration intervals is the current calibration interval and whether the calibration interval was reduced at the last calibration. This information will be available on the TMDE calibration label when properly annotated as described herein.

#### (5) Establishing and Adjusting Calibration Intervals

(a) The initial calibration interval for TMDE will be determined from the current edition of the METRL. If an item of TMDE is not listed in the METRL, the generic calibration interval shall be used. The generic calibration intervals are established in Section 2 of the METRL.

(b) Adjustments to the calibration interval shall be made per the following criteria:

1 TMDE having a current calibration interval of 1 to 12 months shall be increased/decreased 1 month at a time. No TMDE in this category shall have its interval reduced below 1 month.

2 TMDE having a current calibration interval of 13 to 18 months shall be increased/decreased 2 months at a time.

3 TMDE having a current calibration interval of 19 to 23 months shall be increased/decreased 3 months at a time, with no TMDE having its interval extended beyond 24 months. The following exceptions apply:

a TMDE which has a current calibration interval of 22 months and an initial interval of 24 months or less will be increased 2 months.

b TMDE which has a current calibration interval of 23 months and an initial interval of 24 months or less will be increased 1 month.

4 TMDE having an initial calibration interval of 24 months or longer will not be subject to interval extension but will be subject to interval reduction 3 months at a time. The only exception is TMDE which had an initial calibration interval in excess of 24 months and subsequently decreased may have the interval extended 3 months at a time, but will not be increased beyond the initial calibration interval.

(c) The calibration label will be annotated as follows:

1 The calibration interval will be written in the lower left-hand corner (in months).

2 The calibration interval change will be placed in the upper left-hand corner. For example:

" +3 " (number of months increased)

" -2 " (number of months decreased)

" 0 " (no change in interval)

d. SCIP Implementation and Administration

(1) SCIP Candidate TMDE List. Based upon calibration standards and personnel resources, a determination for which model numbers of TMDE can be supported by the calibration facility.

(a) Recommended candidate TMDE's are those items having exhibited a historically high percentage of calibrations without concurrent repair due to operational failure caused by normal equipment usage.

(b) Notification will be made to all using units that the SCIP is to be used by the calibration facility. The calibration facility shall mail a listing, by serial number, of all TMDE on the SCIP Candidate TMDE List to all using units. Using units may request additional TMDE candidates be added by annotating the listing with TMDE model number and serial number and mail the list back to the calibration facility for consideration.

(c) The SCIP Candidate TMDE List shall be mailed sufficiently in advance to permit the timely actions by the calibration facility and using units prior to the implementation of the SCIP.

(d) Additional TMDE requested by the using units for the SCIP will be evaluated by the calibration facility and the using unit will be notified whether the TMDE will be added to the SCIP.

(2) SCIP Candidate TMDE Logbook. The serialized model number SCIP Candidate TMDE Lists shall form the input documentation for the SCIP Candidate TMDE Logbook.

(a) SCIP Candidate TMDE Logbooks should be maintained for each model number TMDE.

(b) Tracking of ERO's, upon which the initial inspection/calibration/repair annotations were made per previous instructions, can be effected by recording serial numbers of each model number in the appropriate SCIP Candidate TMDE Logbook.

(c) Additional information recorded for each ERO should be at a minimum: Reporting Unit Code, date received in the calibration facility, the calibration interval assigned and the change in calibration interval.

(d) Initially, the SCIP Candidate TMDE Logbook will impose additional administrative requirements, but the offset in workload due to increased calibration intervals will be recouped in a year. Accurate, daily updating is required to ensure that the candidate TMDE is afforded the benefits of the SCIP.

(e) Trends in unreliability and instability should be noted on an item-by-item basis, so that historical documentation in the form of ERO's are not lost when historical files are biannually purged.

(f) Documentation recorded in the SCIP Candidate TMDE Logbooks will provide information to sustain the SCIP with the future implementation of an automated workload and reporting system.

6. Action

## NOTE

The SCIP may not be feasible in all situations where periodic calibration is provided. Therefore, SCIP is a VOLUNTARY program to be utilized at the discretion of the calibration facility commander providing the calibration service as well as the using unit commander, per paragraph 5a, preceding.

a. Calibration Facilities. Calibration facilities implementing the use of the SCIP will be responsible for the management and overall operation of the program which includes:

(1) Timely evaluation and ultimate identification of unstable and unreliable TMDE.

(2) Thorough indoctrination and training of newly assigned personnel on the detailed procedures to be followed in the operation of the SCIP.

(3) The periodic review of adjustment actions taken to determine effectiveness of the program from the test equipment reliability and calibration workload standpoints.

b. Using Units. Using units holding TMDE are responsible for the following actions:

(1) Submitting to the calibration facility a list of TMDE, by serial number, to be supported under the SCIP, to include those items on the SCIP Candidate TMDE List and additional model number TMDE, by serial number, desired for the SCIP. Additional TMDE requested by the using units for the SCIP will be evaluated by the calibration facility and the using unit will be notified whether the TMDE will be added to the SCIP Candidate TMDE List prior to the implementation of the SCIP.

(2) Submitting the TMDE for calibration within ± 15 days of the calibration due date, as annotated on the calibration label.

BY DIRECTION OF THE COMMANDANT OF THE MARINE CORPS

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